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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/694,262	10/27/2003	Sumit Majumder	ANALOG.6687	4122
7590 06/14/2005 Samuels, Gauthier & Stevens LLP Suite 3300 225 Franklin Street Boston, MA 02110			EXAMINER ROJAS, BERNARD	
			ART UNIT 2832	PAPER NUMBER

DATE MAILED: 06/14/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/694,262

Applicant(s)

MAJUMDER ET AL.

Examiner

Bernard Rojas

Art Unit

2832

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-19 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-19 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 10272003 04092004.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: ____.

DETAILED ACTION

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Claims 1-19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Zavracky [US 5,638,946] in view of Ma [US 6,531,668].

Claim 1, Zavracky discloses a micromechanical relay [figures 2A and 2B] comprising:

a substrate [30] with a source contact [32], a gate contact [34] and a pair of drain contacts [36] mounted there on; and

a deflectable beam [38] including, a conductive beam body having a first end and a second end, said first end of said conductive beam body being attached to said

source contact [figure 2A], said conductive beam body extending substantially in parallel to said substrate such that said second end of said conductive beam body extends towards the drain contacts [figure 2A],

a beam contact [46] overhanging said drain contacts, and

an insulator [42] positioned between said second end of said conductive beam body and said beam contact to join said second end of said conductive beam body to said beam contact and to electrically insulate said conductive beam body from said beam contact [figure 2A].

Zavracky fails to teach that the second end of said conductive beam body extends over said drain contacts.

Ma discloses an micromechanical relay [figures 1B and 1C] comprising: a substrate [22] with a source contact [26], a gate contact [46] and a pair of drain contacts [36] mounted there on; a deflectable beam including, a conductive beam body having a first end and a second end wherein the second end of said conductive beam body extends over said drain contacts.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to extend the second end of the conductive beam body of Zavracky over the drain contacts as taught by Ma in order to optimize the field effect of the gate contact on the deflectable beam.

Claim 2, Zavracky discloses the micromechanical relay as claimed in claim 1, wherein said deflectable beam is deflectable to a first position, said first position being when said beam contact is in electrical communication with said drain contact in

response to an electrical field of a first strength established between said gate electrode and said conductive beam body; said deflectable beam being deflectable to a second position, said second position being when said beam contact is electrically isolated from said drain contact in response to an electrical field of a second strength established between said gate electrode and said conductive beam body [col. 5 lines 54-57].

Claim 3, Zavracky discloses the micromechanical relay as claimed in claim 1, wherein the substrate comprises oxidized silicon or glass [col. 5 lines 64-66].

Claim 4, Zavracky discloses the micromechanical relay as claimed in claim 1, wherein said deflectable beam body comprises nickel, gold, titanium, chromium, copper, or iron [col. 5 line 66 to col. 6 line 2].

Claim 5, Zavracky discloses the micromechanical relay as claimed in claim 1, wherein said insulator comprises polyimide or PMMA [col. 6 lines 5-7].

Claim 6, Zavracky discloses the micromechanical relay as claimed in claim 1, wherein said insulator comprises silicon nitride, silicon oxide, or aluminum oxide [col. 6 lines 5-7].

Claim 7, Zavracky discloses the micromechanical relay as claimed in claim 1, wherein said drain contact comprises platinum, palladium, titanium, tungsten, rhodium, ruthenium, or gold [col. 6 lines 9-11].

Claim 8, Zavracky discloses the micromechanical relay as claimed in claim 1, wherein said gate contact comprises platinum, palladium, titanium, tungsten, rhodium, ruthenium, or gold [col. 6 lines 9-11].

Claim 9, Zavracky discloses the micromechanical relay as claimed in claim 1, wherein said source contact comprises platinum, palladium, titanium, tungsten, rhodium, ruthenium, or gold [col. 6 lines 9-11].

Claim 10, Zavracky discloses the micromechanical relay as claimed in claim 1, wherein said micromechanical relay is incorporated into an electrical circuit [figure 2C].

Claims 11 and 19, the claimed method steps for making a micromechanical relay would have been necessitated by the product structure as described in claim 1 previously by Zavracky in view of Ma.

Claim 12, Zavracky discloses the method as claimed in claim 11, wherein the substrate comprises oxidized silicon or glass [col. 5 lines 64-66].

Claim 13, Zavracky discloses the method as claimed in claim 11, wherein the conductive beam body comprises nickel, gold, titanium, chromium, copper, or iron [col. 5 line 66 to col. 6 line 2].

Claim 14, Zavracky discloses the method as claimed in claim 11, wherein the insulator comprises polyimide or PMMA [col. 6 lines 5-7].

Claim 15, Zavracky discloses the method as claimed in claim 11, wherein the insulator comprises silicon nitride, silicon oxide, or aluminum oxide [col. 6 lines 5-7].

Claim 16, Zavracky discloses the method as claimed in claim 11, wherein the drain contact comprises platinum, palladium, titanium, tungsten, rhodium, ruthenium, or gold [col. 6 lines 9-11].

Claim 17, Zavracky discloses the method as claimed in claim 11, wherein the gate contact comprises platinum, palladium, titanium, tungsten, rhodium, ruthenium, or gold [col. 6 lines 9-11].

Claim 18, Zavracky discloses the method as claimed in claim 11, wherein the source contact comprises platinum, palladium, titanium, tungsten, rhodium, ruthenium, or gold [col. 6 lines 9-11].

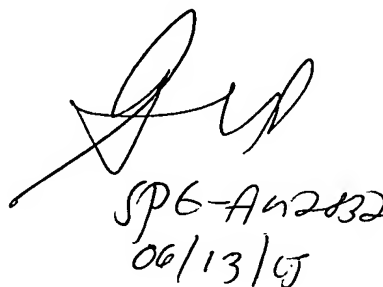
Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Bernard Rojas whose telephone number is (571) 272-1998. The examiner can normally be reached on M-F 8-4:00), every other Friday off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Elvin G. Enad can be reached on (571) 272-1990. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).


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